

Gemkids™

FOR SCHOOLS

EDUCATION STANDARDS

(met by the activities found in the Educator Guide)

UPPER ELEMENTARY
GRADES 3–5



GIA®

gemkids.GIA.edu

NATIONAL EDUCATION STANDARDS



	LESSON 1 "ROCK STARS"										LESSON 2 "A DAZZLING JOURNEY"									
	Gemologist Meet and Greet	Show What You Know	The Story of a Gem	Crystal Geode Eggperiment	Who, What, How?	Circle of Wondering	Ext. Birthstones and Lore	Ext. Rock Collection	Ext. Gee, A Geode	Ext. Rock Cycle Labs	Ext. Pearls of Wisdom	Gems in My Life	From Magma to Me Hypothesis	Journey of a Gem Simulation	From Magma to Me Conclusion	Circle of Learning	Ext: Moh's Scale of Hardness	Ext: Family Interview	Ext: Gem-ometry Math Labs	Ext: Precious Poetry
Next Generation Science Standards for Grades 3-5: Source: www.nextgenscience.org																				
ESS1: Earth's Place in the Universe																				
ESS1.C: Certain features on Earth can be used to order events that have occurred in a landscape. Local, regional, and global patterns of rock formations reveal changes over time due to earth forces.			X		X					X										
ESS2: Earth's Systems																				
ESS2.A: Earth's major systems interact in multiple ways to affect Earth's surface materials and processes. Water, ice, wind, organisms, and gravity break rocks, soil, and sediments into smaller pieces and move them around.			X		X					X										
ESS2.B: Earth's physical features occur in patterns, as do earthquakes and volcanoes.			X	X	X				X	X		X	X	X						
ESS3: Earth and Human Activity																				
ESS3.C: Human activities in agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean, air, and even outer space. But individuals and communities are doing things to help protect Earth's resources and environments.												X	X	X						
Cross Cutting Concepts																				
Patterns: Observed patterns in nature guide organization and classification and prompt questions about relationships and causes underlying them			X	X				X	X	X		X		X						
Cause and Effect: Mechanism and Prediction: Events have causes, sometimes simple, sometimes multifaceted. Deciphering causal relationships, and the mechanisms by which they are mediated, is a major activity of science and engineering.			X	X						X		X	X	X						
Systems and System Models: A system is an organized group of related objects or components; models can be used for understanding and predicting the behavior of systems.		X	X	X	X					X		X	X	X						



	LESSON 3 "TIME TO SHINE"										LESSON 4 "LOOK INTO THE CRYSTAL BALL"											
	Imagine Free Write	What is Valuable to Me?	Gem Kids Jewelry Time Machine	The Gem Laboratory	Time to Shine	Circle of Reflection	Ext: Diamonds from the Mine	Ext: Family Time Machine	Ext: Dazzling Gem Research Auction Project	Ext: Gem Geography	Bling Business Brainstorm	The Bling Business Machine	What Would You Do?	Ethics in the World	What Did I Learn?	Pearls of Wisdom	Ext: Jewelry on the Red Carpet	Ext: Dear Parent of a Future Gemologist	Ext: Gems in the News	Ext: Ask a Gemologist	Gemology Exhibition	
Next Generation Science Standards for Grades 3-5: - cont'd Source: www.nextgenscience.org																						
ESS1: Earth's Place in the Universe																						
ESS1.C: Certain features on Earth can be used to order events that have occurred in a landscape. Local, regional, and global patterns of rock formations reveal changes over time due to earth forces.																				X	X	
ESS2: Earth's Systems																						
ESS2.A: Earth's major systems interact in multiple ways to affect Earth's surface materials and processes. Water, ice, wind, organisms, and gravity break rocks, soil, and sediments into smaller pieces and move them around.																					X	
ESS2.B: Earth's physical features occur in patterns, as do earthquakes and volcanoes.									X												X	
ESS3: Earth and Human Activity																						
ESS3.C: Human activities in agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean, air, and even outer space. But individuals and communities are doing things to help protect Earth's resources and environments.											X	X	X	X							X	X
Cross Cutting Concepts																						
Patterns: Observed patterns in nature guide organization and classification and prompt questions about relationships and causes underlying them									X													
Cause and Effect: Mechanism and Prediction: Events have causes, sometimes simple, sometimes multifaceted. Deciphering causal relationships, and the mechanisms by which they are mediated, is a major activity of science and engineering.			X							X		X	X	X								X
Systems and System Models: A system is an organized group of related objects or components; models can be used for understanding and predicting the behavior of systems.												X										



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Common Core English Language Arts Standards: Source: www.corestandards.org																					
R.1 Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.							X											X			
R.4 Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.							X				X							X			
R.7 Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.																		X			
R.10 Read and comprehend complex literary and informational texts independently and proficiently.							X											X			
Writing																					
W. 2 Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.					X										X						
W.6 Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.																					
W.7 Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.																					
W.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.							X														
W.10 Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.																					



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Common Core English Language Arts Standards: - cont'd Source: www.corestandards.org																					
R.1 Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.								X				X							X		
R.4 Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.																					
R.7 Integrate and evaluate content presented in diverse media and formats, including visually and quantitatively, as well as in words.			X				X	X											X		
R.10 Read and comprehend complex literary and informational texts independently and proficiently.				X															X		
Writing																					
W. 2 Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.																		X			X
W.6 Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.			X	X				X	X										X	X	X
W.7 Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.								X													
W.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.								X	X											X	X
W.10 Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.	X																				



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Common Core English Language Arts Standards: Source: www.corestandards.org																				
Speaking and Listening																				
SL.1 Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.	X					X						X		X	X	X		X		
SL.2 Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.														X	X					X
SL.5 Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.																				
SL.6 Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.	X				X	X					X	X			X	X		X		
Language																				
L.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.							X								X					
L.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.							X								X					
L.4 Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.							X										X			
L.6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.					X		X								X					



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Speaking and Listening																					
SL.1 Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.		X	X		X	X			X				X	X	X	X					X
SL.2 Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally.			X		X				X									X			X
SL.5 Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.			X	X	X				X	X											X
SL.6 Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate.	X	X				X							X	X	X	X					X
Language																					
L.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.	X	X											X	X	X	X				X	X
L.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.	X												X		X	X				X	X
L.4 Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.		X																X	X	X	
L.6 Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when encountering an unknown term important to comprehension or expression.																		X	X	X	



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Common Core Math Standards: Source: www.corestandards.org																				
Grade 3																				
O.A. Represent and solve problems involving multiplication and division																				
O.A.B. Understand properties of multiplication and the relationship between multiplication and division																				
O.A.C. Multiply and divide within 100.																				
O.A.D. Solve problems involving the four operations, and identify and explain patterns in arithmetic.																				
M.D.B. Represent and interpret data.																			X	
G.A. Reason with shapes and their attributes.																			X	
Grade 4																				
O.A.A. Use the four operations with whole numbers to solve problems.																				
N.B.T. A. Generalize place value understanding for multi-digit whole numbers																				
M.D.A. Solve problems involving measurement and conversion of measurements.																			X	
Grade 5																				
N.B.T. A. Understand the place value system.																				
N.F. B. Apply and extend previous understandings of multiplication and division.																				
G.B. Classify two-dimensional figures into categories based on their properties.																			X	



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Common Core Math Standards: - cont'd Source: www.corestandards.org																					
Grade 3																					
O.A. Represent and solve problems involving multiplication and division						X											X				
O.A.B Understand properties of multiplication and the relationship between multiplication and division						X											X				
O.A.C Multiply and divide within 100.						X											X				
O.A.D Solve problems involving the four operations, and identify and explain patterns in arithmetic.						X											X				
M.D.B Represent and interpret data.																					
G.A. Reason with shapes and their attributes.																					
Grade 4																					
O.A.A Use the four operations with whole numbers to solve problems.						X											X				
N.B.T. A Generalize place value understanding for multi-digit whole numbers																	X				
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National Council for Social Studies Standards: <i>Source: National Curriculum Standards for Social Studies: A Framework for Teaching, Learning, and Assessment</i>																				
Culture																				
The learner will explore and describe similarities and differences in the ways groups, societies, and cultures address similar human needs and concerns.																				
The learner will describe ways in which language, stories, folktales, music, and <i>artistic creations</i> serve as expressions of culture and influence behavior of people living in a particular culture.																				
Time Continuity and Change																				
Learners will demonstrate an ability to use correctly vocabulary associated with time such as past, present, future, and long ago; read and construct simple timelines; identify examples of change; and recognize examples of cause and effect relationships.																				
People, Places, and Environments																				
Learners will understand human modifications of the environment														X	X	X				
Learners will understand the use of a variety of maps, globes, graphic representations, and geospatial techniques to help investigate the relationships among people, places, and environments																				
Individuals, Groups, and Institutions																				
Learner will give examples of and explain group and institutional influences such as religious beliefs, laws, and peer pressure, on people, events, and elements of culture;																				
Production, Distribution, and Consumption																				
Learners will describe how we depend upon workers with specialized jobs and the ways in which they contribute to the productions and exchange of goods and services.														X	X					
Learners will describe the influence of incentives, values, traditions, and habits on economic decisions.														X	X					



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Culture																					
The learner will explore and describe similarities and differences in the ways groups, societies, and cultures address similar human needs and concerns.		X	X	X	X	X															X
The learner will describe ways in which language, stories, folktales, music, and <i>artistic creations</i> serve as expressions of culture and influence behavior of people living in a particular culture.		X	X			X															X
Time Continuity and Change																					
Learners will demonstrate an ability to use correctly vocabulary associated with time such as past, present, future, and long ago; read and construct simple timelines; identify examples of change; and recognize examples of cause and effect relationships.			X	X	X	X															X
People, Places, and Environments																					
Learners will understand human modifications of the environment								X	X		X								X		X
Learners will understand the use of a variety of maps, globes, graphic representations, and geospatial techniques to help investigate the relationships among people, places, and environments			X	X	X				X												X
Individuals, Groups, and Institutions																					
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Production, Distribution, and Consumption																					
Learners will describe how we depend upon workers with specialized jobs and the ways in which they contribute to the productions and exchange of goods and services.											X	X									X
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International Society for Technology in Educations (ISTE) Source: www.iste.org																				
Creativity and Innovation: Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.																				
Communication and collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.																				
Research and information fluency: Students apply digital tools to gather, evaluate, and use information.																				
Critical thinking, problem solving, and decision making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.																				



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Communication and collaboration: Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.			X	X				X	X												
Research and information fluency: Students apply digital tools to gather, evaluate, and use information.			X	X				X	X												
Critical thinking, problem solving, and decision making: Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.			X	X				X	X												

